

PRESENTATION FRETWORK DESIGN WITH THIS NUMBER.

Hobbies

• A. Weekly. • Journal. •

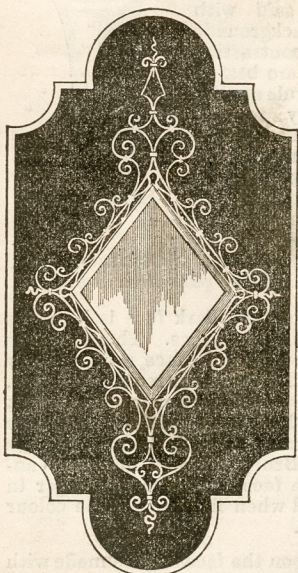
For Amateurs of Both Sexes.

No. 25. VOL. I.

APRIL 4, 1896.

ONE PENNY.

BENT IRON WORK WALL
MIRROR.



DESIGN, No. 25.

Electricity:—

How to Make an Electric Motor.

Painting on China.

Cycling.

Stamps Week by Week.

Poultry as a Hobby.

Photographic Notes and Hints.

Satin Painting.

Bees for Pleasure and Profit.

Weekly Presentation Design.

Photo Enlargements.

Prize Competitions, Correspondence,

Etc.



CHAP V.—FLOWER PAINTING.

FLOWERS have a very effective appearance upon china, and, if a bold design is chosen, they are excellent practice for the student. Simple flowers with few petals are the best, both for work and after appearance, roses and such like blossoms presenting too much difficulty to be treated with anything like success by any but a practised worker in ceramic colours.

Ox-eyed daisies upon a grey or green ground look charming if neatly worked, whilst wild roses, apple blossoms, and any of the almost endless variety of flags offer elements of similar success. The white petals of daisies, lilies, &c., may be laid in with Chinese White put on with a brush without spreading—shading with Light or Pearl Grey. The white china may be left for the highest lights. The centre of daisies may be painted with unmixed Orange Yellow, using thin Sepia as a shade. Put in the leaves with Grass Green. This colour may be used for the local tint of almost all leaves, using Jonquil, or mixing Yellow and Blue for the lighter tones. For the background green leaves of the Oxeyes, Light Grey, with Grass Green in different proportions, should be used. The stems of the same flowers may be made with Brown Green, touched with a little Carmine Brown when shading. Any but iron colours must be laid immediately upon the face of the china.

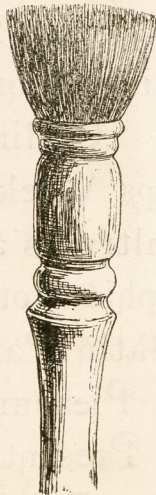
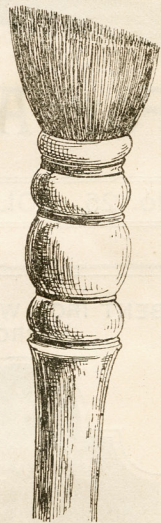
Blue flowers, such as the corn flower, need Ultramarine worked in the darker shades with Violet d'or Fonce, but morning glories may be shaded with Carmine. The red centres to blue flowers are put on with Carmine No. 3 and Sepia, the yellow with Orange Yellow shaded with Sepia. The first washes of all flowers and leaves, how-

ever, as in landscape painting, must be allowed to dry before proceeding to the shading. Pink flowers will possibly take Carmine as their local colour, shades being made with Apple-Green and self-colour, using a little Purple in the deeper tones. For yellow pansies, the Yellows both light and dark may be used, the different shades being worked into each other while wet to produce the velvety texture so noticeable in this flower. For dark pansies, Royal Purple and Azure Blue will be found good. White Enamel or Permanent White should be used in the second coats. In using Royal Purple little or no oil should be used, as this colour has a tendency to become fatty.

It has been said with regard to the backgrounds of flowers that a contrasting colour and shade are best to be chosen. This rule applies more particularly to the groundings for heads, the flesh tints appearing to greater advantage upon a cold indefinite colour than if set in a ground of warmer tone. Let it be laid in before commencing the face, and too much detail be strictly avoided in this part of the work.

A good flesh tint for a dark face is Vandyke Brown in its fainter washes. This must be brushed over the whole of the face, neck, and any other parts where flesh tints are required, adding, before dabbling, a small portion of Brunswick Brown to the cheeks. Use the dabber whilst the paint is wet, commencing with the higher lights and working the Brunswick well into the Vandyke. The entire face can be made deeper in tint than required when finished, as the colour will fade in firing.

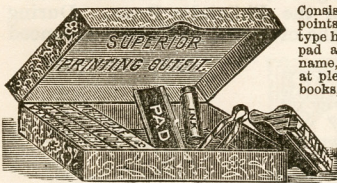
The shadows upon the face may be made with Vandyke Brown, Grey Black being useful for the half tones. Vandyke Brown shadowed with Black will answer for the lips.

FLAT-TOPPED
DABBER.SKEW-TOPPED
DABBER.

For a fairer face Flesh Red and Golden Brown may be used, rising in the high lights to pale tints of yellow. Rouge Chair Nos. 1 and 2 may be employed for the cheeks, and Purple Brown, if at hand, for washing over the lips. The whole face will need much stippling before the first firing. The hair must be treated broadly with Sepia, using more or less Vandyke Brown for the shading. In every case let background and drapery and even the hair be subservient to the face, which should be well drawn and finished. In flower and figure painting lay in the local colours with the lightest wash, working up to the darker tones for the finish. It should be remembered that Browns have to be laid deeper than other colours, as they have a habit of disappearing in the firing.

Finally, a word as to the most important branch of the ceramic art,—the firing. This is sometimes done at home by means of a "muzzle" or earthen oven. The great majority of people, however, send to the various potteries, or to the agents connected with the potteries, when they want any article to be fired. This is by far the better plan, as some experience is necessary to effect the home firing with success. China paints are now to be purchased of so many artists' colourmen, both in London and the provinces, that it seems scarcely necessary to mention here where either the colours or the other articles used in the course of China Painting may be procured. And where the colours may be bought is the best place for gaining information as to the nearest potteries open to receive work for firing. The prices charged for the work differ slightly, of course, with each firm, but a plaque of the size mentioned in a previous chapter will not cost more than 6d. at the outside for firing. Others, of course, larger, will be charged according to size, rising, in fact, to any price; but, on the whole, plaque and tiles, and perhaps cups and saucers, are the cheapest to be fired. A small cup and saucer may be finished in the one painting if the artist be expert, and sent up to be fired at the low cost of 6d., whilst a vase of only three inches will alone cost that sum.

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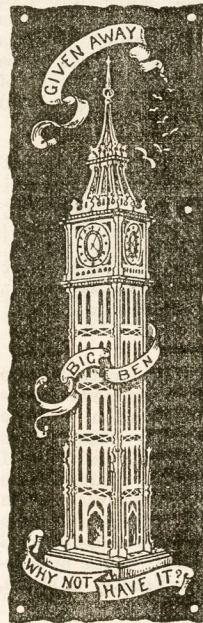
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STAMPS

Week by Week.

A Philatelic Causerie by PERCY C. BISHOP,

Joint Editor of the "STAMP COLLECTORS' FORTNIGHTLY;" Ex-Editor of "THE PHILATELIC JOURNAL" and "PHILATELIC REVIEW OF REVIEWS;" General Secretary of the LONDON PHILATELIC CLUB.

BOGUS ISSUES OF STAMPS.

MANY weeks back I promised the readers of *Hobbies* a description of the most notorious issues of bogus postage stamps—stamps, that is to say, which were in most cases brought out with the deliberate intention of swindling collectors. I am now able to find space for the promised article.

BOLIVIA.—The stamp, or rather gummed label, illustrated by the annexed engraving, represents one of the cleverest and most unscrupulous frauds ever perpetrated at the expense of the Philatelic community. The alleged stamp was manufactured by a French rogue, who showed considerable craft and no small amount of audacity in his proceedings. The first intimation of the "issue" of this supposititious stamp was received at the Paris Philatelic Exhibition of 1892, where a frame of them was exhibited, the exhibitors representing themselves, with splendid impudence, to be emissaries of the Bolivian Government. In their *Monthly Journal* of June, 1893—nine months after the appearance of the stamps—Messrs. Stanley Gibbons, Limited, wrote:—

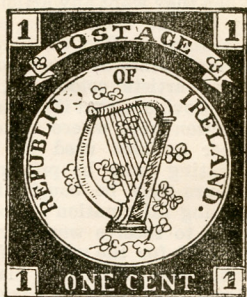
The Bolivian Legation in Paris deny any knowledge of such stamps, and there is no doubt that the man who sold them, namely, Mr. R. Moens, of Paris, entirely originated and carried out this bold swindle. One fact that led us to have some additional faith in these stamps was, that on April 5th last we received from Bolivia a parcel of them supposed to be sent us in the ordinary way to be exchanged for other sets or packets. These copies had various postmarks; but a peculiar fact was, that the envelope itself was franked with the current issue of Bolivia rouletted, also that from the date of the letter we found that it had been five months on the journey. There appears to be no doubt that it was written in France, and sent out to Bolivia to be posted to us.

In another month the bursting of this Bolivian bubble was completed, and the many collectors who invested in them were honourably refunded their remittances by the two leading dealers in this country who had been responsible for a wide circulation of the bogus labels.

IRELAND.—Perhaps there is not sufficient excuse for including Ireland in this article. The stamp shown here has never, so far as I know, been foisted upon Philatelists as a genuine postal issue. But this and other "Fenian" stamps have been widely circulated

at various times among sympathisers with the "distressful country," and solely with the idea of amusing those readers who may never have heard of "the Republic of Ireland," I give a fac-simile of the best known variety here. The fact that it is priced at "1 cent," will reveal to the thinking reader the origin of this droll stamp.

NYASSALAND.—We come now to an issue which gave rise, during 1894, to a somewhat acrimonious controversy in the Philatelic Press. During the later months of 1894 it had been announced



that stamps would be issued for use in the Nyassa Company's territory in Africa, and that the sole agency for the sale of these stamps to collectors in Great Britain would be granted to a certain leading provincial dealer. In due course the stamps appeared, and Philatelists were not slow to comment upon the suspicious fact that various unnecessary varieties were created, obviously for the sake of swelling the amount of the sales to stamp collectors. In January, 1895, the *Stamp Collectors' Fortnightly* impeached the whole issue on the ground that the conditions laid down by the Portuguese

Government in the charter granted to the Nyassa Company had not been observed. Confirmation of this was quickly forthcoming; the stamps were formally condemned, and after the S.O.F. had pegged away at the subject for many months the dealer involved in the flotation of the issue admitted his "error of judgment," and agreed to refund all sums paid to him for these stamps. These stamps then are absolutely bogus, and anyone who buys them pays money for absolutely worthless pieces of paper.

In next week's *Hobbies* I shall conclude this article, and commence another, the headline of which, "Stamps to be avoided," will fully explain its object.

—:o:—

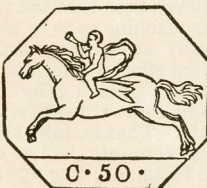
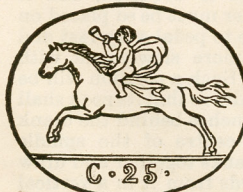
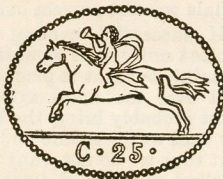
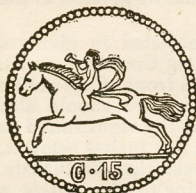
THE MAGIC LANTERN & PHILATELY.

The magic lantern is playing a large part in Philately. All the leading societies of stamp collectors have had their magic lantern shows, using the lantern as a handy means of showing minute varieties of stamps, the differences between forged and genuine, &c. The latest to adopt the idea is the City of London Philatelic Club, which on Monday, March 23rd, gave its members a delightful feast of Philatelic pictures. Lovers of the lantern who also make a hobby of stamps would do well to include a few Philatelic "slides" in their performances. One of these weeks I shall show them an easy way of making the slides. There is nothing so interesting as a review of the world's stamps on the charmed sheet of the magic-lanternist.

—:o:—

THE FIRST STAMPS EVER ISSUED.

THE SARDINIAN LETTER SHEETS OF 1819-20.



How many of my readers have seen the curious stamps illustrated above? Specimens of them are to be seen in many old collections,

but one may search every recent stamp catalogue in vain for any mention of them. As a matter of fact they are not *postage stamps* at all, as we understand the term. The stamped letter-sheets of Sardinia, of which there were two distinct issues, first appeared in the year 1819 (twenty years before the first *adhesive* postage stamp was issued in this country). At first the stamps were impressed in blue, but in the second issue (1820) they were embossed in white on special watermarked paper. Three values went to the making up of each issue—15, 25, and 50 centesimi. Now, the curious thing about these early letter sheets is that the stamp impressed upon them did not pay postage, but simply indicated a tax imposed by the Government of King Victor Emanuel upon persons who conveyed letters from place to place in competition with the regular postage service of the country. To make this quite plain, it was as if the British Post Office of the present day imposed a tax upon the District Messenger service by issuing stamped letter sheets upon which all letters conveyed by that service must be written. Until a few years ago a well-known Philatelic firm was selling these curious old letter-sheets at the rate of £6 the set of six; but since their true nature was explained they have been dropped as possessing no interest for Philatelists. There are many collectors, however, who think differently, and among them must be numbered those who shrewdly suspect that these early Sardinian letter sheets suggested to Sir Rowland Hill his great scheme of postal organisation.

There are no

NEW ISSUES OF STAMPS

to report this week.

(To be continued.)

STAMP COLLECTORS

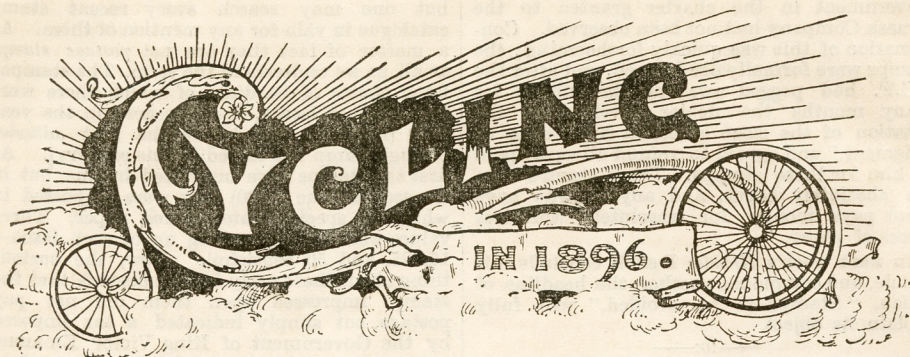


Should send 1d. Stamp to HARRY HILCKES & Co., Ltd., 64, Cheapside, London, E.C., for "Specimen" copy of **Stamp Collectors' Fortnightly**. Contains articles for beginners, as well as for advanced Collectors.

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HOW TO DRILL HOLES IN GLASS.—A spear-shaped drill may be used, and must necessarily be of the size of the hole required measured across the widest part of the drill. The point of the drill must be kept lubricated, and forced through with a rotary and backwards and forwards motion. The lubricant may be a saturated solution of camphor and spirits of wine. The drill must be kept sharp.

REPAIRING BOOKS.—Every one knows the misfortune of "breaking" the cover of a book, or of finding the body of the book from some unexplained reason separating from the cover. Recourse has to be made to the glue pot. Before doing so carefully strip all the paper from the back of the cover, leaving the cloth or leather quite bare; then liberally glue the cloth-taking care that the glue is not too thick and perfectly free from any foreign substance—and also the back of the book. Bring the two closely together, rub well, and leave them to dry. This will open fairly and will hold the cover on for all time. Don't attempt to use gum for such a purpose, it is worse than useless.



THE IMPORTANCE OF A CORRECT POSITION.



We were speaking last of the rather momentous question of buying a bicycle, and before quite leaving this subject it may be well to point out to novices that the agent through whom the machine is purchased is the fit and proper person to see that everything about it is right. Before the new bicycle passes outside his door he should make sure that all parts are in good order, and, more than that, it is his business to see that his customer is properly suited and fitted. A bicycle is not like three-pennyworth of sugar to be wrapped in a paper bag at lightning speed and tossed to the purchaser with a bare "thank you." If the grocer, as we are told, gets "absolutely nothing" out of sugar, the cycle agent, as a rule, gets a legitimate profit, and sometimes a very good profit, out of cycles. A person who is buying a bicycle therefore has a perfect right to expect the dealer or salesman to go all over the machine, if necessary, with the spanner, and to adjust any or every part that may require attention. The buyer who has little or no knowledge of cycling should not think of leaving the depot until his handles, saddle, pedals, and other parts have been set to suit his requirements and comfort. Much depends on these adjustments being made with care.

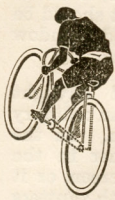
A novice may lower his saddle or raise his handles while he is learning the balance, but directly after that elementary stage is over he should at once see that these parts are correctly placed. If however, as already recommended, the novice should borrow or hire a second-hand bicycle on which to learn the balancing act, he can have his own new machine properly adjusted from the first. On what constitutes correct adjustment a variety of opinions are expressed, and the novice should bear in mind that very frequently the people who are most loud in offering advice, or in holding forth as to the correctness of their own views, are just those who are least qualified to give an opinion on which reliance can be placed. The writer has, for instance, heard a man, a clever man too, and a practical engineer, assert most emphatically that the peak of the saddle should



be four or five inches *in front* of the crank axle. This man was not much of a rider, but he considered that his engineering experience entitled him to speak with authority. Pressed as to his reasons for his extraordinary views he said that when the saddle was placed in such a forward position the rider was "right over the work," and his weight and strength could then be utilised in driving down the pedals to the best possible advantage. We mention this in order to show, among other things, that the scientific expert is by no means always correct in his cycling views. Our engineering friend's idea in this instance was that of many other people who have plenty of theory, and sometimes plenty of "talk," but very little practice. He imagined that the position in which the greatest possible amount of force could be applied to the pedals was the correct one.

If successful cycling consisted in giving a limited number of gigantic leg thrusts, it would certainly be right to place the front of the saddle well over the crank axle, and we should also most probably bring the handles right round as far back as the saddle and a few inches below it. But then we do not want these gigantic thrusts. Cycling consists of imparting to the pedals a very large number of exceedingly light and easy pushes. Very frequently, as in down hill or on a fast level road with the wind behind, the pedals revolve almost, if not quite, of themselves, and the difficulty is to get our leg action light enough and quick enough to follow them. When a hill has to be faced, or the wind is contrary, some pushing is, of course, required, but even here the bodily effort is put into a series of steady, even strokes. No one individual herculean push is required, and it follows then that the rider must be so placed on his machine as to be able to pedal very fast and easily at one time, and more slowly and with more effort at another. Such a position will be found by placing the saddle so that its peak shall come some three to six inches behind the crank axle. That is, take the centre of the spindle that connects the two cranks together and draw an imaginary line upwards from it in a vertical direction. The front of the saddle should be some three to six inches behind that line. It is impossible to give a more exact rule than this, as there are many points to be taken into con-

sideration in determining the saddle's horizontal position.



For instance, a short, thick-set, heavy man will require a more vertical action than a younger and more active rider. Another safe rough rule is that the higher the gear used the more vertical should the rider's position be. In the old days when the only machine was the tall ungeared "ordinary" the best riders used to put their saddles a long way back, and use what was called a short reach. That is, the leg was never extended, even at the bottom of the stroke. At anything like high speed on the big bicycle the leg action was very rapid indeed, and this backward low position was found to be the best to adopt, especially for fast work. On the modern bicycle things are rather different. The gearing gives us slower pedalling, even at a higher speed than the old machine could ever touch. But the higher the gear the more the pushing that has to be done, and therefore the more vertical should be the position.

A correct reach is quite as important to comfort and good riding as a correct horizontal position. The term "reach" is used to signify the distance between saddle and pedals. A man whose leg is fully extended when the pedal reaches its lowest extremity is said to ride with a "long reach," and a very bent leg is, of course, a short reach. The best reach is neither short nor long. Many ladies have adopted a reach too short and a saddle position too backward. This arrangement calls for a good deal of muscular work with the leg, and it gives to the rider a rather aggressive-looking knee action, which, in the case of women especially, is anything but graceful. For very easy riding the position is well enough, and if all cycling were down hill a low and backward seat would be the best. For ordinary average work, however, a medium reach gives the best results. To get the reach too long is a great mistake. Such a fault is bound to lead to discomfort and bad riding. When sitting comfortably in the saddle the rider should be able to follow the pedal to its lowest point without straightening his leg quite out. It is impossible to pedal fast if the knee joint has to be straightened out and bent again every stroke. In fact, the faster the leg action required the more bent should the leg be when extended. The ordinary rider has, of course, to consider what is best for ordinary all-round work, and he must adopt a medium height on his machine, not so high that he cannot pedal fast when he wants to, and not so low as to cramp his action and prevent him using his weight when there is heavy pushing to be done.

The height of the handles is another rather important matter. This should be regulated from the saddle, which must be fixed correctly first. The height of handles is largely a matter of taste. The fast rider must have them low, and the idler may have them high. High handles enable the rider to preserve an upright seat and they are well enough when the "going" is easy, and they give a feeling of comfort and security down hill. When speed is required, or when wind and hills have to be faced, low handles are a great assistance. Many ladies set their handles too high, and many riders who

think they are cracks of the road set them absurdly low. There is no doubt that the bolt upright position is entirely wrong from a cycling point of view. For anything like successful riding some stoop is requisite, and a stoop it should be remembered does not necessarily mean round shoulders. The stoop is from the hips rather than from the middle of the back, and such a stoop need not be ungraceful.

(To be continued.)



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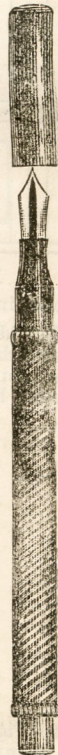
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How to make Photographic Enlargements.

ENLARGING BY DAYLIGHT (*continued.*)

FOLLOWING up our last chapter, we now give sketches of necessary arrangements for daylight enlarging. Fig. 1 shows a Window Frame Screen. This will be best made in two parts, A and B, and hinged. It can be covered with black twill, ruby fabric, or other material that will effectually keep out daylight. But if the worker has a room at his disposal for photographic purposes, we would advise the filling of the frame with thin wainscot boards, which are tongued and grooved, and may be easily put together. The frame itself may be made of $2\frac{1}{2}$ by $\frac{1}{2}$ -inch or 2 by $\frac{3}{4}$ -inch wood,

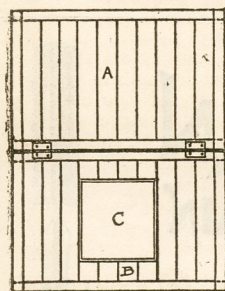


FIG. 1.

backed into it as shown in Fig. 2.

Should the window have a central bar dividing each sash it will, of course, be necessary to have the opening in the lower half on one side or other of such bar.

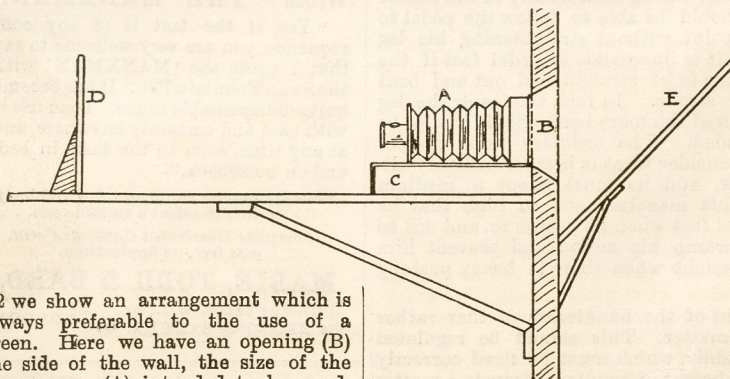


FIG. 2.

In Fig. 2 we show an arrangement which is in many ways preferable to the use of a window screen. Here we have an opening (B) made in the side of the wall, the size of the back of the camera (A) intended to be used. C shows an arrangement upon which the camera stands, and also a board upon which the easel (D) may be moved. It will be noticed that the camera is raised considerably above this board in order to admit of centreing upon the easel. We explained in the last chapter that this board might be dispensed with, and an easel such as shown in Fig. 3 used in place of it. By shortening the bracket under the board it is quite

possible to have the board hinged, but a bolt will then be required to make it rigid when used at its full length. In the sketch Fig. 2, E shows the reflector and the angle at which it should be placed. In the case of the blocked window (Fig. 1) it will be best to use a reflector.

We give one other example of daylight enlarging in Fig. 4. In this case A is an ordinary camera, and B the enlarging camera. In the former the negative is placed either in the position occupied by the focussing screen, or it can be put in a dark slide with both shutters drawn. In B the sensitive plate, or the bromide plate upon which the negative is to be enlarged, is placed in a dark slide supplied with the camera for the purpose. These two cameras are placed upon a base-board, and the A camera is pointed towards the sky at an angle of about 45 degrees, and the exposure made. In the sketch we show the A camera separate from the B or enlarging camera. In practice there is no space, but the lens of the former fits an opening in the front of the latter camera. If for any reason such an arrangement is not possible, a long box may be used into which the A lens will protrude, and in order to keep out all daylight it will be necessary to use a focussing cloth, or to cover the opening with some material that will successfully exclude all daylight.

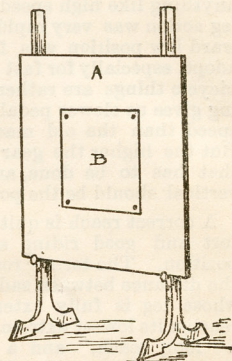


FIG. 3.

Before proceeding to say anything about enlarging by artificial light, we will give brief instructions with regard to the procedure

necessary to turn out an enlarged negative and an enlargement upon bromide paper.

Let us presume that so far as the darkening of the room is concerned everything has been properly done, that the screen is in position, the daylight carefully excluded, the reflector "set" at such an angle as to throw the best light

available on to the negative, and the baseboard and easel all ready for action. Remember that the front of the camera and the easel must be at right angles to the baseboard.

If the window is entirely blocked the worker should supply himself with a non-actinic lantern—ruby or orange—and place it in such a position that it will give a well distributed light in the room. This done, place the negative to be enlarged in the frame on the screen (C, Fig. 1) or in the dark slide of the camera, *upside down*, with the glass side towards the light and the film towards the room. See that no extraneous light can get in round the back of the camera, and cover the juncture with a piece of velvet or soft black twill.

Place the easel exactly opposite the lens, and upon the easel (D, Fig. 2) pin a piece of stout white paper (as shown at B, Fig. 3) the same size as the bromide paper intended to be used. If an enlarged negative is to be made use a spoilt plate that has not been developed, or face it with thin white paper. Rest this on drawing pins. Back out the lens and travel the easel backward or forward until the image from the negative is sharp and of the size desired, *i.e.*, covers the paper or plate on the easel. When this is done,

and the image is sharp to the corners and the whole surface equally illuminated, place the cap on the lens. Before removing the white paper mark carefully upon the board the exact position it occupies, then remove, and in its place fix the sheet of bromide paper.

With regard to the easel it is well to mark upon it the different sizes of paper or dry plates generally used, and then there will be no difficulty in placing the plate or sensitive paper in the exact position to receive the image. Naturally the least movement of the easel will

spoil the enlargement; there should therefore be some simple means of clamping it in position after the correct focussing has been secured.

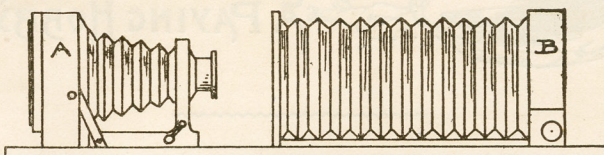


FIG. 4.

Having given the exposure decided upon, the next step is development, which must be left for another chapter. Whatever exposure is given should be carefully noted. As Mr. Wheeler says, there is no golden rule with regard to exposure; it is governed by actinic value of the light, colour and density of the negative, focal value of the lens and its stops, rapidity of the paper or plate used, and relative sizes of the negative and enlargement.

(To be concluded.)

HOBBIES' SUPPLY DEPARTMENT.

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WE again refer readers to Nos. 20 and 21 of *Hobbies* for a full explanation of the Supply Department which we have recently established.

We are confident that the Department will prove of the greatest service to our readers, and we are especially glad to notice the widespread interest it has already excited. All the subjects dealt with in *Hobbies* are under the control of experts, and we are only too glad to place their knowledge and experience at the disposal of all who may desire to take advantage of them. We want to make *Hobbies* an absolutely indispensable paper to all who know it, and no trouble will be spared to attain this object. We trust, then, that no reader will hesitate to write to us upon no matter how small a subject, and if there should at first be any slight delay in meeting the requirements of any of our readers, this will disappear when our Supply Department has got into thorough working order, and we are able to calculate with greater exactness the demands which are likely to be made upon its resources. We cordially invite all who think we can be of any assistance to them to write to us without delay. All letters should be addressed to The Manager, "*Hobbies*' Supply Department," Bouverie House, Salisbury Square, London, E.C.

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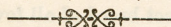
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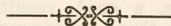
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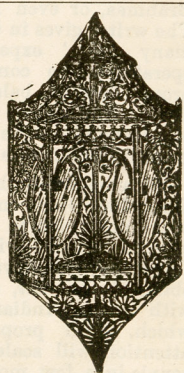
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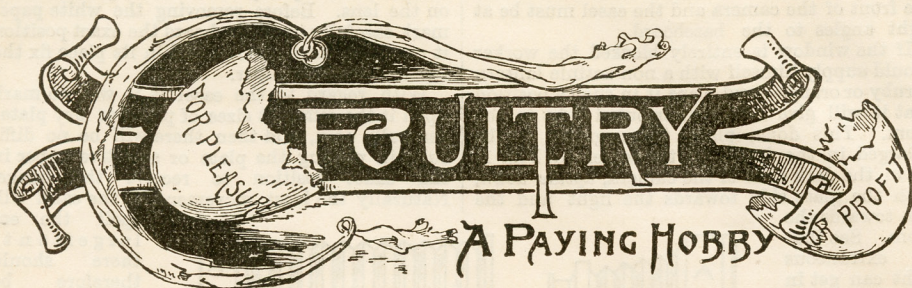


TABLE POULTRY.



It must be admitted that poultry keeping on a practical basis is not only the means of adding zest to the hours of leisure, but may become a substantial source of profit. The latter is especially the case with table poultry, which may with care and attention be made to yield a handsome addition to the owner's income, more particularly if the poultry keeper has plenty of space at his command and pays attention to the proper breeds. The great object to aim at is, by crossing certain pure breeds of poultry, to obtain the largest quantity and finest quality of breast meat upon a light bone frame. As explained in the last article there are breeds of fowls suitable for laying purposes only, and it would be absurd to try to succeed with table poultry if such breeds as Leghorns, Minorcas, Brahmas, or even Plymouth Rocks are kept. The writer gives in these articles the results of many years' experience, and if breeding operations are commenced at once on the proper lines the balance should be on the right side by the end of the season. This question of producing at the right season is one of very great importance as regards profit.

With respect to the correct breed of all fowls, the Indian Game on the male side is the very best from which to produce table poultry, and whether crossed with the Dorking, Orpington, Langshan, or Wyandotte, a good result is obtained; in fact, any of these breeds mated with a good Indian Game will produce fowls which, with proper feeding, rearing, and attention will scale from 18 lb. to 20 lb. per couple in a few months, and will be found to display plenty of good breast meat and light bone. For choice of cross bred table poultry, the Indian Game crossed with the coloured Dorking is a cross which has stood the test of many years, and, whether alive in the show pen or dead on the poulterer's block, will take a high position on account of the very high quality of the meat, its quantity where it is most to be desired, and the small size of the bones. The reader is therefore recommended to obtain a

large Indian Game cockerel and five or six Dorking hens, or five or six Indian game hens and one Dorking cockerel. With dark Dorking hens the chickens are stronger and invariably much larger. They also feather very quickly, thrive well, and will be found to be even ready for killing when three months old. Their breast meat is deep and of very fine quality. The hens are generally found to be fairly good layers, although they have a tendency to broodiness, but always make capital mothers and first-rate sitters. This breed are good foragers, and do well with ample space to roam on. When well grown they handle, to use a common term, "like a lump of lead." It may not be known that poulterers will always pay a really good price for birds of exceptional quality, and whereas the killing price of ordinary farm poultry is but 3/- to 3/6 each, well-fed fowls of this cross will in any London market command 5/- to 7/- each. Who will say after this that table poultry cannot be made to pay?

Another cross which poultry farmers are recommended to breed from is the Indian Game-Langshan, which is truly a fine table cross. The deep keel of the Langshan breed is thus increased and fully covered with the finest quality of white juicy flesh. This breed will do well in confined runs, and will suit small fanciers who want really good table birds. They lay nice looking brown eggs and breed mostly black chickens. They fledge well and are general favourites. It must be stated here that these crosses, owing to the vigour imparted by the Indian Game cock, produce exceptionally good and hardy chickens, and may be hatched with impunity in the coldest of weather.

There are several methods open to the would-be table poultry keeper, viz., to purchase sittings of eggs of the varieties mentioned and hatch them by means of broody hens, or in large numbers in an incubator, and thus commence operations at once; or to purchase a pen of birds of the required breeds, and breed from the eggs obtained from them. At this season of the year the former is the cheapest and best plan, as sittings of eggs can generally be obtained from 2/6 to 3/6, a sitting of reliable

breeders. (If readers experience any difficulty in obtaining what they want, the Manager of the *Hobbies*' Supply Department will no doubt be able to help them.)

A few hints as to feeding must be given, and here it should be stated that, although good and substantial feeding is necessary, the chickens must not be forced by high feeding, such as poultry spices, until after they are half grown. They should, however, be allowed the best of food, such as boiled eggs and bread crumbs, for the first day, and barley meal, middlings, and ground oats during the first week. The meals should be given every few hours, and only as much as can be eaten at one meal should be given. Four meals a day should be given until the chickens are a fortnight old, when three meals will suffice, and this should be continued till they are two months old. The last meal of the day should consist of groats. Should the weather be cold, the food should be given very hot, being prepared by pouring boiling water over the whole mass, which must be well stirred and made into a nice crumbly consistency. If skim milk can be easily obtained, it should be used in place of water. As regards grain, a change is advised, such as wheat on Monday and Tuesday, barley on Wednesday, then wheat again next, and a mixture of wheat and maize, and so on. During the last ten days before killing for market special food must be given, the diet being changed to ground oats moistened in milk in which finely-chopped suet should be incorporated. The latter will not only assist the fattening process, but also improve the texture of the skin as well as whiten the flesh. It may not be generally known that oats are a food of a well-balanced nature, combining heat-giving, flesh-forming, and fatty properties. There is really no corn grown equal to good oats, providing they are of the proper weight and not too chafflike. Oats should contain 38 lbs. to the bushel, and the heavier they are, of course, the better. The time usually required to fatten a fowl for the market is ten days.

Poultry fattening can be carried on with very little capital and with the assurance of a certain gain in the increased price obtained for poultry so treated. Briefly, the methods employed are by means of pellets of corn, which the bird is made to swallow; the cramming machine, a peculiar-shaped apparatus after the style of a coffee mill, by means of which the meal is forced down into the crop of the fowl; and hand funnels, the small ends of which are placed in the neck of the fowl, while the food is placed in a semi-liquid condition in the other end.

Lastly, it must not be forgotten that the better the appearance of a fowl for market the higher will be its market value. The fowls must be properly killed and packed. All poultry should be kept without food or water for eighteen hours before killing. The neck should be broken close to the head. The fowls should be plucked without "barking" the skin, tied loosely at the hocks, and both fowls and ducks should be pressed in a shaping board, being allowed to remain there for five or six hours to cool. They should be well and evenly packed in baskets or hampers.

(To be continued.)

Photographic Hints for Amateurs.

THE LARGEST LENS IN THE WORLD.

A lens has been made successfully which is 62 inches in diameter and weighs 2,300 pounds.

MOONLIGHT EFFECTS.

Moonlight effects in Photography, and particularly in lantern slides, have always been popular with the public. Professor Burton, writing upon them, recently said:—"The way to get moonlight effects is to give a very brief exposure, to develop till the high lights became very dense, and to print deeply, little more than high lights being visible. The best effects are got with the sun somewhat forward, and especially when clouds lit from behind—just screening the sun—can be included."

AMIDOL AS A DEVELOPER.

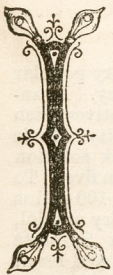
This developing agent has become very popular because of its cleanliness and efficiency. It undoubtedly gives soft and delicate negatives with plenty of detail and moderate density. It is made up in the following form:—Stock solution of Sulphite of Soda 20 per cent.—one in five. To make 10 ounces of stock developer take 100 grains by weight, or three drams by bulk, of dry amidol, and dissolve in 10 ounces of stock Sulphite solution. Stir up well and allow to stand for at least five minutes before use. If any floating particles are then observed, filter through muslin or filter paper. Then stock developer in a stoppered bottle for a considerable period. For use, dilute with one or more parts of water. For ordinary exposures add one grain of Bromide. For badly under exposed negatives dilute with three parts of water and develop very slowly. For over exposure Citric Acid may be used as a restrainer, and when sufficient details are out, strengthen density by adding one dram of 10 per cent. Potassium Citrate, and allow it to act upon the plate for some time.

SELECTION OF SUBJECT.

A contemporary writing upon the Pocket Kodak thus treats the selection of subject:—"One of the first lessons in the selection of subjects, taught by results in using the camera, and particularly these little cameras, upon groups or figures, is the importance of the proper relation of the figures to the rest of the picture. Attention must be given to the distance of the central subject and its background, and also to the character of the background. Unless the background be something in the nature of a yellow-washed rough wall, there must be intervening atmosphere between the group and the view backing it; for harsh blacks and whites, or cutting lines, or distracting figures coming just at the back of the main object, make a spotty, unpictorial effect. In other words, look for good relief, whether got by a smoke, mist, or out of focus background. In a landscape or architectural subject, the uncommonness of the effect, the massing of the light and shade, and the pattern of the whole must, of course, always be considered."



HOW TO MAKE A SIMPLE ELECTRO-MOTOR.



IN this article the reader will find the description of a small Electro-Motor, one of the most simple that can possibly be designed. An Electro-Motor, our younger readers may be informed, is a contrivance for converting Electricity into motion. The Motor under consideration is not by any means powerful enough to drive sewing or fretsaw machines, but it will be found very useful for driving any small models.

The electro-magnet is the first part to be made. Procure a piece of very soft iron 5 inches long and $\frac{3}{8}$ -inch in diameter. The best quality of iron for this purpose is known as "Three-crown Swedish." This piece of iron should be bent to the shape as shown in Fig. 1. When bent, it should be annealed by placing it in a fire at night time and allowing it to remain there till the following morning; this makes the iron very soft and prevents it retaining much residual magnetism. When the iron is cool it should be filed up to remove the scale.

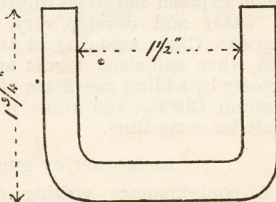


FIG. 1.

A couple of boxwood bobbins, each about $1\frac{1}{2}$ inch long and $\frac{3}{8}$ -inch in diameter in the bore, should be filled with equal lengths of No. 22 silk-covered copper wire; a 4-ounce reel should be more than sufficient for the purpose. When winding the bobbins, a length of wire should be left at each end for connections. These parts can now be laid aside while the base is prepared.

For the base a piece of $\frac{1}{4}$ -inch hard wood, 6 inches long by 4 inches wide, is necessary, and should be prepared for polishing. Two holes must be bored in this large enough to admit the magnet legs, so that the magnet itself is in the centre of the base. On the under side of the base a groove should be cut with a gouge, so that

when the magnet is in position the yoke or centre will lie flat in the groove. When the magnet is in its place a small saddle of wood should be screwed underneath to keep it in position. Four supports should be fixed to the corners of the base.

For the armature, or revolving part of the motor, a piece of round iron or steel, $3\frac{1}{2}$ inches long by $\frac{1}{8}$ -inch in diameter, is required. This is called the shaft. At a distance of two inches from one end a small disc of brass is soldered or brazed. This disc should be about $\frac{1}{8}$ -inch thick and 1 inch in diameter, and should have four holes drilled in it; one in the centre to take the shaft, and three others to admit small screws. This disc is for holding the wooden wheel to which the armature bars are fixed.

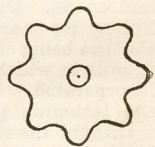


FIG. 2.

A circular piece of hard wood, 2 inches in diameter and $\frac{1}{8}$ -inch thick, is now required; it should be turned very true, and the edges trimmed square with the sides. A hole just large enough to admit the shaft must be bored exactly in the centre. To fix up the armature bars is the next task; these should be $2\frac{1}{2}$ inches long (long enough to span the poles of the magnet), $\frac{3}{8}$ -inch wide, and $\frac{1}{8}$ -inch thick, and should have a small screw hole drilled in the centre of each. Eight bars will be sufficient, the face of each being filed bright and the rest being enamelled. These bars should be tightly screwed

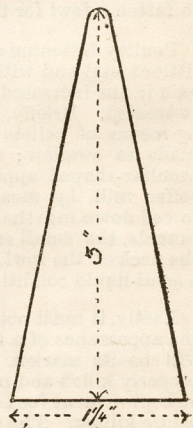


FIG. 3A.

to the face of the wooden wheel at equal distances from each other. A contact breaking wheel is a necessary item. This wheel is of brass and should be $\frac{1}{8}$ -inch thick by $\frac{3}{8}$ -inch in diameter, and a hole must be drilled in the centre to admit the shaft. Around the circumference of the

wheel a number of cogs must be filed, corresponding to the number of bars on the armature. Fig. 2 shows a finished wheel. This contact wheel should be soldered to the shaft at a distance of $\frac{1}{4}$ -inch from one end. A small wooden pulley may be fixed on the other end of the shaft.

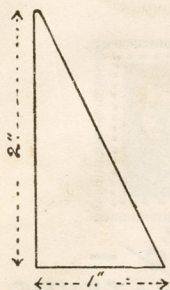


FIG. 3B.

To support the bearings a couple of standards must be fitted. A small quantity of $\frac{1}{4}$ -inch fretwood is useful for this. Four pieces are required, two of each kind. Fig. 3, A and B, indicates the shapes and sizes. Take one piece of each and screw them together

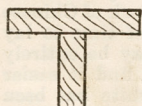


FIG. 4.

small set square. At a distance of $2\frac{3}{4}$ inches from the base end of each stand a small hole must be drilled to admit the bearing brasses.

We have now to make and fit up the bearings in which the shaft revolves. For these we require two pieces of strip brass, each $\frac{3}{4}$ -inch long, $\frac{3}{8}$ -inch wide, and $\frac{1}{16}$ -inch thick, and two pieces of brass tubing each $\frac{1}{4}$ -inch long and just large enough to slip on the ends of the shaft. These pieces of tubing should be soldered to the brass strip at a distance of $\frac{1}{16}$ -inch from one end. At the other end of the strip two small screw holes should be drilled. These bearings should now be screwed on the supports so that the tubes fit in the holes and face inwardly. The standards must then be screwed to the base, but before screwing up the last the shaft should be placed in the bearings.

A contact spring and adjusting screw are now necessary. For the first a piece of spring brass $1\frac{1}{2}$ inch long and $\frac{1}{4}$ -inch wide is required; at one end a small screw hole should be drilled. The adjusting screw had better be purchased ready made. When obtained it will be seen to consist of a brass pillar screwed at one end and at the other end fitted with a platinum-pointed moveable screw. A piece of wood should be prepared, one inch long, half an inch wide, and half an inch thick. At one end of this the contact spring should be screwed, and the adjusting screw then screwed in so that the platinum point touches

the flat portion. A piece of platinum should be soldered to the spring where the point of the adjusting screw touches. The wooden block should then be screwed to the standard so that the point of the contact spring touches the cogs on the contact breaking wheel. When fixing the contact apparatus one of the armature bars must be facing the magnet poles, and the bent end of the contact spring should be resting on the contact wheel in the position shown in Fig. 5. The arrow shows the direction of the armature's rotation. A couple of terminals should be screwed into the base so that the battery and wires may be connected.

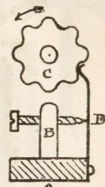


FIG. 5.

The various connections must now be made. The ends of the bobbin wires should be connected as in an electric bell, so that the direction of the winding on one bobbin is in the opposite direction to the winding on the other. One of the other ends is then connected to the contact spring and the remaining end to one of the

terminals. A short length of wire should connect the remaining terminal to the contact pillar. This done, the Motor is complete, and may be tried by connecting it to a chromic acid cell. The contact screw should be adjusted, and if the Motor has been made according to the instructions, the armature will rapidly revolve.

We have not given any instructions regarding finish, as it is

to leave this to the reader's discretion.

No doubt many readers would like to know *why* the armature revolves, and a word of explanation may here be given. Let us suppose that the article has been properly made and adjusted. When the armature bars face the magnet poles the circuit is, by means of the contact wheel, broken. Upon moving the armature forward the end of the contact spring drops into a recess in the contact wheel and touches the adjusting screw, thereby completing the circuit and allowing the current to traverse the magnet cores. Upon this, these cores become highly magnetic and attract the next bar on the armature. The action takes place with great rapidity, and if sufficient battery power is supplied the armature may revolve several thousand times per minute.

DESCRIPTION OF MOTOR ILLUSTRATIONS.

Fig. 1.—Magnet Core. Fig. 2.—Contact Breaking Wheel. Fig. 3.—A, Bearing Standard; B, Piece for strengthening ditto. Fig. 4.—Bearing Standard, End section. Fig. 5.—Contact Apparatus; A, Wooden bar; B, Contact pillar; C, Contact wheel; D, Contact spring. Fig. 6.—Finished Motor. A, Base; B, Standard; C, Wire-filled bobbins; D, Bearing brasses; E, Armature wheel; F, Shaft; G, Armature bars; H, Contact spring; I, Pulley; J, Supports; L, Saddle.

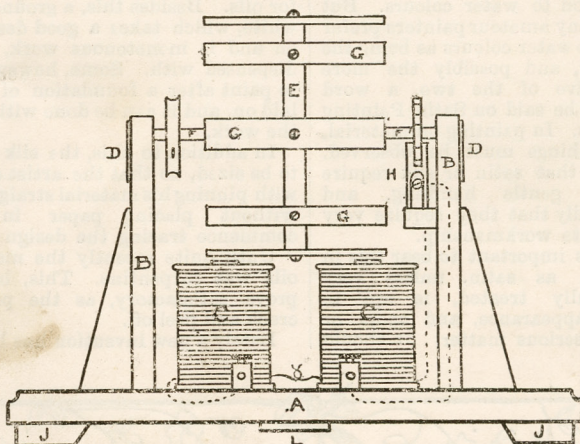
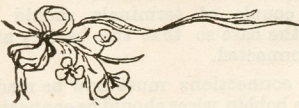


FIG. 6.

THE ART OF



SATIN PAINTING - FOR AMATEURS

CHAPTER II.



IN the article preceding this, Satin Painting was dealt with only in relation to water colours. But as many amateur painters prefer oils to water colours as being the easier, and possibly the more effective of the two, a word must be said on Satin Painting in oils. In painting on material, two things must be observed. First that satin or silk require very gentle handling, and secondly that they require very delicate workmanship. It is important to bear this in mind, as satin, unless very carefully treated, is apt to become woolly in appearance, and spots or marks on it are a serious matter. It should

Whilst water colours require the use of several mediums, it is only necessary to use one for oils. Besides this, a groundwork of Chinese white, which takes a good deal of time to lay on and is monotonous work, may be entirely dispensed with. Some, however, find it easier to paint after a foundation of white has been laid on, and it can be done without detriment to the work.

In addition to this, the silk does not require to be sized, so that the artist can start at once with pinning his material straight on to the board without placing paper in between, and commence tracing the design.

Until quite recently the medium used with oils was turpentine. This, however, did not prove satisfactory, as the paint was apt to crack and peel off.

Lately a new invention has been brought out,



FIG. 1. VEIL OR GLOVE CASE.

also be remembered that satin which has been painted on ought never to be ironed, and great care must therefore be taken to prevent creases.

The advantages of using oil in preference to water colours in painting on satin are many. First of all, it is quicker work and half the trouble. This is in itself sufficient to recommend it to amateurs who are generally distinguished by the desire to do the most effective work with the least possible trouble, and in a minimum amount of time.

which is in every way a complete success. It is called the "Adolf" medium, and is sold in small bottles at 1/- each; for work of at all a large size two or three bottles would be required. It successfully prevents the paint from cracking and gives a certain amount of brilliancy to the colours, and it also helps them to flow easily from the brush. No other mediums ordinarily sold with oil paints, such as pale drying oil and the like, are required to be used as well, as the "Adolf" medium supplies their place. It should be used much in the same

way as water is used with water colours, a small quantity being used at a time, as if left in the saucer it dries up very quickly.

Then as to patterns. Amateurs will find it best to restrict their efforts to flowers. Figures or landscapes, such as are sometimes painted on fans, are difficult, and ought to be extremely well done to look really artistic. It is better not to attempt to paint without a coloured pattern, unless the artist is very advanced, as colouring and shading will then present far less difficulty. But a word of warning as regards patterns. Good ones are very hard to find. Nine out of ten of those sold as "decorative panels" are stiff and unsuitable for the purpose, and it will therefore be found best to make additions and improvements from a second pattern of a similar subject, or if possible from the original. But if the amateur is limited as regards design, he has nevertheless a wide field to work upon. Satin and silk are by no means the only materials that can be painted upon.

Fig. 1 is a glove or veil case made of straw-coloured silk, and the flowers painted in shades of *cérise*.

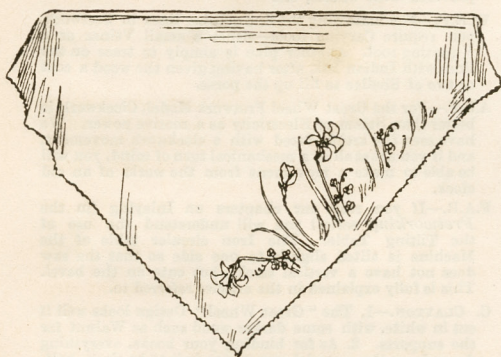


FIG. 2. TABLE CLOTH.

Fig. 2 represents a table cloth made of a fine kind of cloth. It should be of a dull red colour, painted at two opposite corners with yellow daffodils and blue forget-me-nots.

Fig. 3 is a table centre made of white velvet and painted with red and yellow Iceland poppies, the bow and streamers being of pale green. The design, of course, should be considerably larger than that drawn in the illustration.

Painting on velvet is by no means easy, and the beginner will do well to make his first efforts on velveteen. As it would be quite impossible to cover the ground with Chinese white, black or dark coloured velvets should be avoided. The design cannot, of course, be traced on to the material, and it is therefore pricked out on paper and pounce is sifted through the holes on to the velvet.

It is best, perhaps, to use water colours for painting on velvet. They should be put on with "scrubs," rounded brushes made of bristles. Gum arabic must on no account be used with the paints. The colours must not be put on too moist, but the brush must be drained first. It should not be held like an ordinary brush, but

the stick should be grasped between the third and fourth fingers. The only medium that should be used is "Velontine," which serves instead of water.

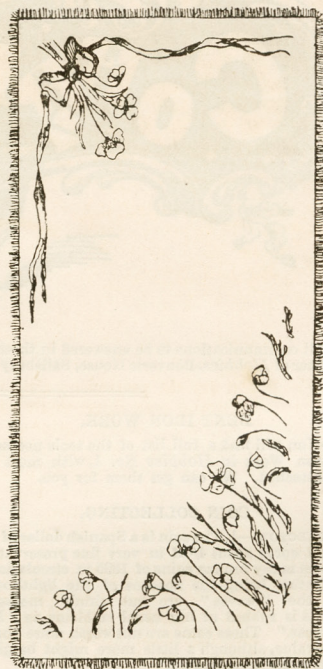


FIG. 3. TABLE CENTRE.

The chief difficulty in painting on velvet is to keep the edges of the design even. This may be facilitated by first tracing the pattern on to cardboard or stiff paper, and after cutting out the inside until only the outline is left, the paint is then brushed on through the openings.

One word in conclusion. A novice in the Art of Satin Painting should make her first attempts on a spare piece of material, and he must not despair if at first they are unsuccessful, for in this, as in every other accomplishment, it is practice which makes perfect.

TRAMCARS AND ELECTRIC LAMP.—Ticket examiners are now supplied with small electric lamps fed by a miniature battery carried in the breast pocket.

BIRDS' SKINS.—The museum committee of the corporation of Liverpool have, it is stated, acquired the collection of birds' skins belonging to Canon Tristram for 3,000 guineas—a sum much below what has been offered by a foreign university. The collection includes about 20,000 specimens of several thousand different species.

POWER AND SPEED OF TORPEDO DESTROYERS.—Few people realise the immense power that is required to propel a vessel of any kind when a speed above 20 knots is required. Take, for instance, the torpedo boat destroyers, which are mere racing machines, even from a naval point of view. The most perfect specimens of vessels of this class, which have attained 30 knots speed, carry 60 tons of coal, which is full one-quarter of their entire sea going displacement. They burn 3½ tons of coal per hour. To attain the 3 knots over 27, which is the highest speed of ordinary torpedo boats, it was necessary to increase the fuel expenditure fully 50 per cent.



*. All communications to be answered in these columns should be marked "Correspondence," and must be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. In no case can we reply to enquiries by post.

BENT IRON WORK.

E.H.T.—You will find a full list of the tools necessary for Bent Iron Work in *Hobbies* No. 1, with most of the prices attached. We can get them for you.

COIN COLLECTING.

COIN COLLECTOR.—1. The coin is a Spanish dollar of Charles III., and worth about 4/- if in very fine preservation. 2. There are many bronze coins of 1895 in circulation, their chief feature being the absence of the lighthouse and ship; the "waves" are but thinly marked, and Britannia is robbed of her usual emblems as "Mistress of the Seas." These coins are not worth more than their current value, although a little more might be given for a set in mint preservation.

ELECTRICITY.

L. DAVIS.—The price we stated is for quantities of 14 lbs. Probably at Telegraph works they would be able to supply you. Try Gordon, 98, Charing Cross Road, W.

H.C.D.—In using chromic acid for batteries it is found by experienced electricians that the best is the cheapest in the end. We thank you for the information you sent.

G.R.—An ordinary incandescent lamp takes $3\frac{1}{2}$ volts per c.p. Supposing the E.M.F. of a battery to be 2 volts and the internal resistance 1 ohm, the current in amperes would be according to Ohm's law—

$$\frac{E}{R} = C \text{ or } \frac{2}{1} = 2$$

The current would therefore be 2 amperes.

FRETWORK, CARVING, &c.

O.E.D.—You require about $9\frac{1}{2}$ square feet of wood for the "Big Ben" Design.

C.B.P.—The "Big Ben" Clock Model looks well when cut in Walnut, with a White pinnacle.

E.H., T.S., AND T.C. (Shetleston).—We cannot definitely promise the designs you ask for.

W.B.C.—For Chip Carving you will find Lime or Walnut suitable woods. Do not polish or varnish the work.

REGULAR READER.—The dark piece of wood you enclose is a rather coarse bit of Padouk. The light piece is Satin Walnut.

S.W. (Tibshaff).—We cannot trace the publishers of the design you sent; so far as we can judge it is not an English pattern.

ANNO DOMINI.—You can apply to any of our advertisers for Fretwork Materials, or we can easily obtain what you require.

H.W.C.—For the Calendar Design try Rosewood, Padouk, or Walnut for the back, and for the other three pieces Pencil Cedar or Satin Walnut, Satinwood or Canary, and White Chestnut or Sycamore. It is a mistake, however, to use too much colour.

CONSTANT READER.—If you send us your name and address we can answer your questions fully. Please state whether you wish the Fretwork spindle to be provided with wheels, etc.

W.E.P.—For indicating the fine veining lines in Fretwork, you require Carving tools—either a small Verner or a V-parting tool. Another plan is simply to trace on the lines with Indian Ink, after having given the wood a coat or two of Shellac to fill up the pores.

A.S.F.—For the Great Wheel Fretwork Model, Clockwork is better than Steam or Electricity as a motive power. We have seen the article fitted with a clockwork movement, and if you are at all of a mechanical turn of mind, you will be able to make a movement from the works of an old clock.

F.A.R.—If you read our chapters on Inlaying (in the *Fretworking* series) you will understand the use of the Tilting Table. The Iron circular table of the Machine is tilted slightly to one side so that the saw does not have a vertical stroke, but cuts on the bevel. This is fully explained in the articles referred to.

C. CLAYTON.—1. The "Great Wheel" Design looks well if cut in white, with some darker wood such as Walnut for the supports. 2. As for binding your books, everything depends on the material you want; is it to be cloth, half-calf, morocco, or what? Our binding covers for *Hobbies* will be announced shortly.

PHOTOGRAPHY AND LANTERNS.

MISS A. E. PRATT.—There is no rule to prevent you sending more.

F.A.B.—The subject of "Enlarging" has been dealt with in *Hobbies*. We shall be pleased to answer any questions or help you in any way.

W. H. SELFORD.—We cannot criticise your photograph before the award is made.

B.G.B.—1. Spoilt $\frac{1}{2}$ -plate negatives are useless, except to glaze a small forcing frame. If you have many drop a brick upon them. 2. If you look through the back numbers of *Hobbies* you will find several notes on mounting photographs.

MISCELLANEOUS.

POSTAL AND J. MACE.—We have not yet room for a series of articles on your favourite hobbies.

A.W.—You should write direct to our publishers giving your full name and address.

R.B.—For particulars of Model Stages, etc., write to Waller, of 86, Tabernacle Street, E.C.; to Bull, of 134, New Kent Road; or to Hamley's, Noah's Ark, Holborn—all in London.

WALTER.—Regarding your Buffalo horns, the best advice we can give you is to send them to some stuffer of animals and birds. You are right with regard to our Supply Department.

H.W.H.—1. As already intimated, *Hobbies* No. 27, which begins the second volume, will have a coloured cover. 2. Binding covers for the first volume will be issued. 3. Yes, Coupons are accepted by the Supply Department.

PRIZE Competitions.

A Competition for Everyone.

We will give a PRIZE of ONE GUINEA for the best, and one of HALF-A-GUINEA for the second best, description of how to make any article intended for either use or ornament. The descriptions sent may be just as short as desired, but they must not in any case exceed one thousand words. We cannot undertake to return any manuscript sent, even if stamps be enclosed for the purpose. The descriptions to which the prizes are awarded will be our absolute property, and we shall reserve to ourselves the right to publish any others which may seem suitable. These will, however, be paid for at our usual rates. All entries must be received at our Office, Bouverie House, Salisbury Square, London, E.C., not later than to-day, April 4th. The envelopes should be marked "Description Competition."

Photography.

Every month we give a prize of TEN SHILLINGS for the best PHOTOGRAPH, and FIVE SHILLINGS for the second best. Subject for this month—"Shipping and Marine View." The print may be by any process, and from any sized negative up to whole plate. Photographs cannot be returned, and we reserve the right to reproduce any of them in *Hobbies* if thought desirable. Photographs for this Competition must be sent to our office not later than April 30th, marked "Photograph."

Wood Carving.

For the best CARVED BLOTTER BOOK COVERS, made from Presentation Design No. 15, we offer Two Prizes:—

First Prize—ONE GUINEA.

Second Prize—SET OF TWELVE SUPERIOR CARVING TOOLS.

The choice of wood and method of carving and finishing are left to Competitors.

Only one side of the Blotter should be sent, and the Carving should not be made up in book form.

Every Competitor must write his or her name clearly on a label which should be pasted to the back of the article.

Articles sent in for Competition will be returned if desired, and for this purpose fully stamped and addressed labels must be enclosed. Blotters cannot be returned unless sufficient stamps are sent.

Articles should be marked "Blotter," and must be received at our office not later than April 30th.

Notice to Competitors.

All Articles, Sketches, etc., for Competition should be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The name and full address of Competitor must in every case be sent.

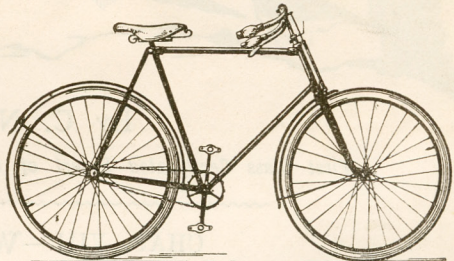
NOTE:—No correspondence can be entered into with Competitors, and all awards made will be final.

HOBBIES' BICYCLES.

The Best Machines to Buy.

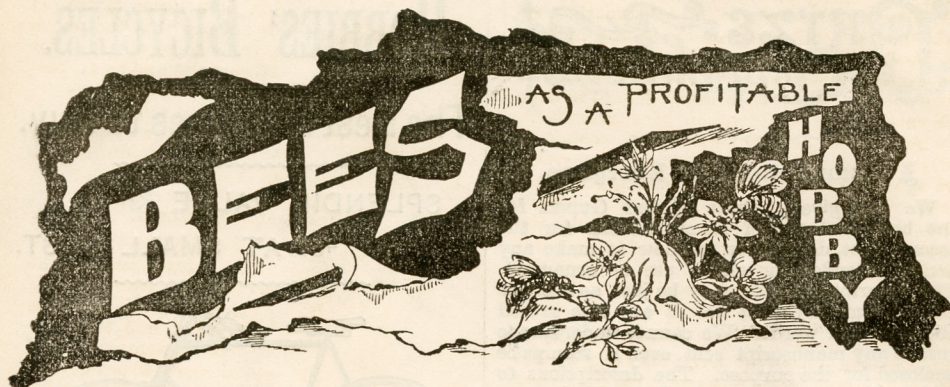
SPLENDID VALUE ~~13~~+

+~~2~~ AT SMALL COST.



THE HOBBIES' ROADSTER, £11.

AS announced in last week's *Hobbies*, we have made arrangements which will enable our readers to obtain really high-class and serviceable bicycles at a moderate price, and which will, we anticipate, at the same time prove a very valuable advertisement to *Hobbies*. We have entered into a contract with a firm of manufacturers who have a high and well-deserved reputation throughout the trade for the excellent quality of the material and workmanship which is put into their machines. We have, in view of the large number of bicycles we expect to dispose of, succeeded in securing exceptionally favourable terms, and, although we do not pretend to sell the machines at absolutely cost price, we are satisfied with placing upon them a very small profit, looking chiefly to the excellent advertisement the paper will receive from their sale. Our readers will therefore be able to obtain the machines at a far lower price than they could buy them in any other way, and they will, in fact, be securing a new bicycle of the first quality at the price of only a good second-hand machine. The offer is in every respect perfectly genuine, and is one of which our readers will be perfectly safe in taking advantage. The quality and workmanship of each machine is formally guaranteed by the maker. We have selected what we consider to be the most suitable machines, and full particulars with illustrations were given in last week's paper. We are offering machines for both ladies and gentlemen, the price for each being £11, while the *Hobbies* Coupons are accepted as part payment in accordance with the conditions laid down in the Weekly Presentation Supplement.



By C. N. WHITE,

First Class Certificated Expert of the British Bee-Keepers' Association.

CHAP. VIII.—WINTERING.



THE subject of Wintering is an all important one, and the success of a bee-keeper's operations during the following season depends greatly on the care which he has bestowed on this part of the work.

It is a very common thing to find weak stocks in the spring, whereas the rule should be for stocks to prove stronger in spring than they were when closed up for winter the previous autumn, and this desirable result is almost wholly within the power of the bee-keeper to bring about.

Briefly stated, the requisites of good wintering are:—

- (1) A substantial, well-painted, and water-proof hive.
- (2) A strong lot of bees and the majority young ones, that is, hatched since the honey-flow.
- (3) A young queen in her first or second season—one hatched during the summer is preferable to one even only a season older.
- (4) An ample supply of sealed stores—20 to 25 lbs.
- (5) Winter passages.
- (6) A good supply of woollen wraps, quilts, or chaff cushions upon the frames.

(1) With regard to the hive little need be said here, beyond advising that every spring a fresh coat of paint should be given to every hive in the apiary; at the same time they should be well cleaned and scoured inside and allowed to get thoroughly dry and sweet before changing places with others that are to undergo a similar cleansing process.

(2) By feeding according to the directions given under the head of "Feeding," after supers

are removed, breeding will be continued, and consequently bees found in the hive on October 1st will be mainly those that have done little work, and are therefore the more likely to exist through the winter, and come out strong and vigorous in the spring when energy and hard work are so necessary in the brood-chamber. If breeding ceases with the honey-flow, old bees are closed up on October 1st, and most of them die during the winter. Those that survive are so old and incapable of much exertion, that the stock makes little headway for a long time, and appears to get weaker and weaker. This is known as spring dwindling, and is seldom known to show itself in well-managed apiaries.

(3) Bee-keepers should bear in mind that the quality of the queen is all-important, and as she is at her best in her second season, every stock should be headed as far as possible by requeening, if necessary, with a queen of the current year. Such queens will commence to lay early, and are quickly stimulated by spring feeding.

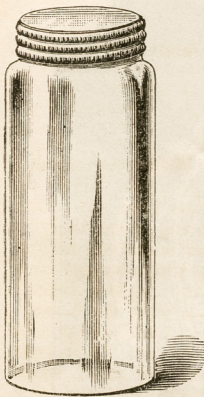
(4) The food should not only be ample, but good. The best food upon which to winter bees is, without doubt, honey, but as we, by our supering arrangements, induce the bees to carry it into chambers which we remove, they must be supplied before October 1st with the best substitute syrup made from pure cane sugar.

The centre combs should only be about half-filled, while the supply in the outer combs should increase until those on the outside are filled from top to bottom. Stocks thus provisioned will require no further attention until about March.

(5) Winter passages. When the bees are closed up for their winter rest they pack themselves in seams or lots between the combs. Here they may be kept during very severe weather, for they are, under such conditions, unable to pass round or under the combs for fear of being numbed with the cold, when they would fall to the floorboard and die.

Very frequently an examination of the brood nest, after a protracted spell of cold weather, reveals the fact that some of the seams of bees are dead, and among them the queen, whose preservation is necessary to the very existence of the colony. Now, in order to ensure that no such catastrophe shall happen, all that is necessary is to provide the bees with a means of passing from comb to comb through the warmest part of the hive. These means of transit are known as winter passages. The first winter passages made were holes cut through the combs in the middle and near the top bar; but though they are effective, they are troublesome to make and cause much disturbance in the apiary.

Passages over the top bars are easily given by simply laying pieces of wood about 9 inches long and $\frac{3}{4}$ -inch square across the bars, and



HONEY JAR.

about half an inch apart, before putting on the quilts. With this arrangement the bees in one part of the hive pass to another part through the warmest portion of the hive, when having consumed the food around them they are in search of a further supply in the outer combs. There is still another means of providing winter passages that I can recommend, because it serves another purpose at the same time. It is by giving a cake of candy when packing up for winter, for when it is placed upon the frames the bees soon provide passage ways by consuming the candy lying upon the bars. A cake of candy given in the early part of the year will also have a stimulating effect, as the bees commence at once to liquefy it and carry it into the brood-chamber. This fresh supply of food induces an extension of the brood nest, and causes the uncapping of cells and the using of the honey in preparing food for the increasing number of grubs.

MARKETING HONEY.

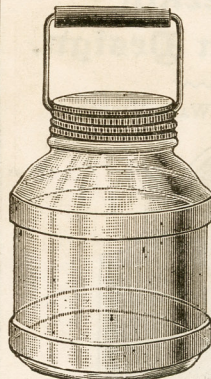
"It is one thing to get honey, but quite another thing to sell it" some readers may say. I quite agree with the remark, which in various forms I have heard many a time. I usually find that when a man really sets to work to accomplish an object, he rarely leaves off when the task is only half done. Anyone putting energy into the work of honey production will usually be equally energetic in finding a market for the produce of the apiary. Those who do not wish to bother with the sale of honey and wax will find dealers in abundance ready to purchase, but at a figure naturally much lower than can be obtained without the intervention of the middle-man.

I am acquainted with many bee-keepers who, at shows last season by success with their exhibits, attracted the attention of buyers, with the result that considerable quantities changed hands. At the Dairy Show one friend sold several cwts. of choice clover honey at 8d. per

lb. wholesale, and another parted with half a ton at a lower figure. I

do not say that the above price is to be obtained for all samples and by all bee-keepers, but, if sold wholesale and at a lower figure, bee-keeping will still be the most remunerative of rural occupations for leisure hours with which I am acquainted.

The choicest samples from white and alsike clover and sanfoin will naturally command the best prices, and there are always customers in big towns ready to get hold of and pay a good price for such honey.



HONEY JAR.

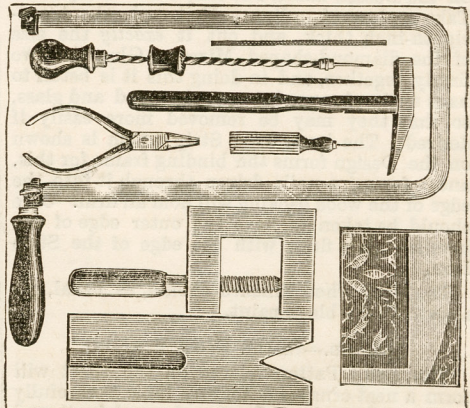
Run or extracted honey should be run into 14 or 28 lb. cans with lever opening lids, or 1 lb. glass jars, according to the class of trade to be supplied, shortly, that is a day or two after being taken from the combs, and before candying has commenced.

If put up in glass jars at about 10s. a gross, and neatly capped with vegetable parchment and labelled, the additional trouble will be very little, and an attractive article is thus obtained for the retail trader. Glass jars at about double the price, with metal screw caps, may be used if preferred.

Honey should be looked upon not so much as a luxury as an ordinary and valuable food to be found on every table, and bee-keepers would do well to make an effort to popularize the use of honey and thus create a home market.

Lastly, by joining the Bee-keepers' Associations they would not only assist the development of the industry, but obtain valuable privileges for themselves, not the least of which is assistance in the sale of the produce of their apiaries.

TOOLS DIRECT FROM SHEFFIELD.

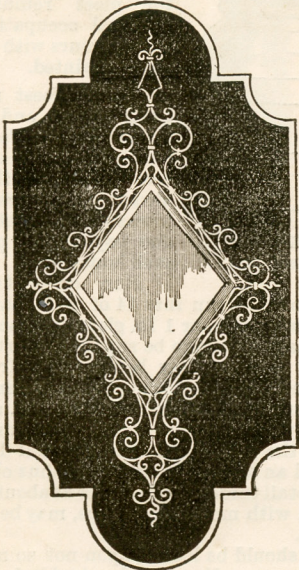


The above illustration represents my Fretworkers' Outfit, sent post free for 2/9. Wood Carvers and Fretworkers send direct for your tools and get SHEFFIELD-MADE tools at SHEFFIELD PRICES. The engraving above is a sample of the value I offer you. Illustrated Catalogue, post free, 2 stamps.

T. H. TAYLOR, Tool Merchant, Sharrow St., SHEFFIELD.

Our Weekly Presentation Design.

No. 25A.—BENT IRON WALL MIRROR.



WITH the single exception of fitting in the bevelled-edged Mirror, no part of this Design will give trouble to the Bent Iron Worker. Throughout, the forming of the curves is comparatively simple, and in no case is the clamping work difficult. The Strip Iron used should be three-sixteenths-inch or quarter-inch wide.

Instructions for fitting in the Mirror are given on the Design sheet, but may here be repeated. Take a piece of ordinary Fretwood, about one-eighth-inch thick, and cut it *exactly* the size of the diamond-shaped Mirror. Glue the two firmly together, and in doing this it is better to have a slip of paper between the wood and glass, so that they may be removed more easily if desired. The inner Iron Strip which is shown on the Design forms the binding frame for this, and a few wire nails driven through it into the edge of the wood backing will hold all firm. Care should be taken to have the outer edge of the bevelled glass flush with the edge of the Strip Iron.

The work when finished should, as usual, get a coat of dead black paint.

No. 25B.—SMALL FLOWER STAND.

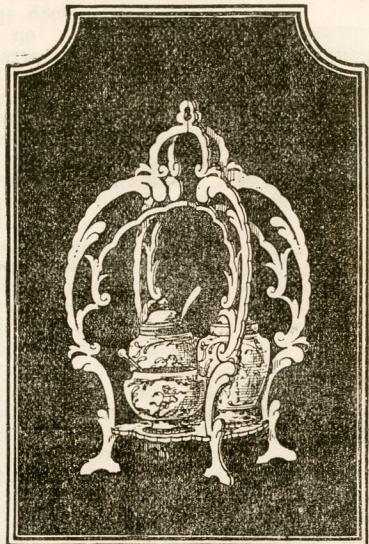
The small Pattern placed on the sheet will form a neat ornament for any table if carefully made. Odd Strips of Iron can be used for it, and as the ornament is very simple a number of articles could be made in a day.

The Mirror is fitted in position in a similar manner as that just described. To strengthen it, however, the two curves which cross each other below the glass may be screwed to the wood back.

Diamond-shaped and Circular Mirrors have been specially made for these Designs, and can be had from the Manager of the *Hobbies* Supply Department, Bouverie House, Salisbury Square, London, E.C., as follows:—Diamond-shaped, bevel-edged glasses, suitable for Wall Mirror Pattern, price 1s. 6d. post free; Circular Mirror, suitable for Flower Stand Pattern, price 8d. post free.

[Additional copies of the sheet containing these two designs may be had, price *Threepence*, from the Publishers of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The Presentation Supplements will be given during the current week of publication only, and will not be supplied with back numbers of *Hobbies*.]

No. 26.—BREAKFAST CRUET STAND.



The above is a miniature of the full-sized Design for a Breakfast Cruet Stand which will be given away with each copy of next week's *Hobbies*. We have, with great difficulty, secured a number of Sets of Rococo China Breakfast Cruet Fittings, handsomely mounted, and ornamented in gold and colours, specially adapted to this Pattern, and which may be obtained from the Manager of the Supply Department at a very small cost.

£20

TOBACCONISTS COMMENCING. See Illd. Guide & Catalogue (350 pgs.) 8d. "How to open a Cigar Store, £20 to £3,000."—Tobaccoists' Outfitting Co. (Reg.), 188, Euston Rd., London. N.B.—Shopfitters and showcase makers for all trades. (Over 50 years reputation.) Mgr., H. Myers.

NOTICE TO CONTRIBUTORS.

The Editor of "*Hobbies*" is always ready to receive Suggestions for Articles for insertion in the paper. Any manuscript sent for his consideration must however be accompanied by a fully addressed and stamped envelope. Unsuitable contributions will be returned without avoidable delay, but it must be distinctly understood that the Editor will not hold himself responsible for the loss of any manuscript.

FOR Sale, and Exchange.

*. The charges for advertisements (prepaid) in this page will be sixpence for every twelve words or less, name and address inclusive, and one halfpenny for every additional word. Single letters, initials, and figures are each counted as a word; but undivided numbers (as 152), and prices (as 10s. 6d.) count as only one word each. In every case the name and address of the advertiser must be given for publication, and we cannot at present undertake to supply a private name or number and receive replies to advertisements at our office. All advertisements must be accompanied by remittances, otherwise they cannot be inserted. Whenever possible, payment should be made in Postal Orders, and not stamps. Letters should be marked "Advt.," and must be addressed to the Publisher, *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

NOTE.—Trade Advertisements can only be inserted in this page at the rate of one shilling per line.

Acme Electric Bell Set, comprising 2½ in. Electric Bell, Quart Leclanche Battery, Push, 50 feet Wire, Staples, Instructions, 4/6; better value impossible.—Electric, Lord Street, Openshaw, Manchester. H. 6.

Any Electrical Apparatus wanted in exchange for three first-class short-faced Tumblers, or sell.—A. Bruce, Park Road, Brechin.

Antique Carving Patterns.—Sets 1, 2, and 3 contain 26, 23, and 25 large patterns respectively of panels, rails, etc., 1/- each set, free.—J. Jackson, Thorngate, Barnard Castle.

Bargain.—Powerful Violin, Bow and Case, 21/-.—Walton, 113, Lower Road, Rotherhithe.

Climax Hand Fret Machine, one of Skinner's, new February, cheap, 7/6; also a good Concertina, 3/6; and a good Keyless Watch, cost 17/6 January, in going order, cheap, 12/6. Money wanted.—R. Boole, Hermitage, Mansfield.

Electrical Hobbies.—How to fit up an Electric Bell Set, make a Motor, and make a Shocking Coil. Separate illustrated instructions, free with list, 2d.—Electric, Lord Street, Openshaw, Manchester.

Electric Light Set, comprising lamp, two batteries, wire, instructions, etc., 1/9. 2-volt accumulator set, all the parts complete with instructions, 3/-.—City Electric Stores, 7½, St. John's Lane, E.C.

Electric Lamps, 2-volt, 6d., three for 1/3; Lamp-holders, 4d.; Reflectors, 3d.; 4-volt Pocket Accumulators, improved system, 5/6.—Whiting, 109, Fore Street, E.C. D. 3.

Electric Light Sets.—Batteries, lamp, wires, chemicals, etc., 1/9, post free. All Electric Hobbies.—Gordon, 98, Charing Cross Road, London.

Foreign Stamps.—Sheets on approval, good variety, low prices. Stamps, any quantity bought.—Phoenix Stamp Company, 31, Radnor Street, Peckham.

Foreign Stamps.—Sheets on approval for beginners and medium collectors. West Indians wanted.—Phoenix Stamp Company, 31, Radnor St., Peckham.

Free.—20 different U.S. to all applicants for sheets, enclosing postage; 100 different stamps, 5d.—Rhodes, Rammas House, Otley. B. 1.

Free.—Pocket Rubber Stamp of your Name and Address; also particulars of the best paying Agency going for whole or spare time.—Richfords Company, Snow Hill, London. D. 3.

Free to Applicants for my well-selected approval sheets, 20 rare stamps, including Japanese (silver wedding), Congo (bay), Persia (rare), Johor, Perak (tiger), Egypt (rare interpostal), etc., etc., worth 2/-; thousands of prizes to be given away free.—John Davey, Hatfield Peverel, Witham.

Fretwoods.—Walnut, Mahogany, Teak, &c., 2½d. and 2d. per foot.—Pallion, Sawmills, Sunderland. H. 1.

Fretworker's Complete Outfit, with wood. What offers?—Bateson, 30, Bolton Road, Westhoughton.

For Sale.—A Campbell's Peerless Patent-stop Accordion in mahogany case, bargain, 30/-.—F. J. Thomas, 25, Severn Road, Cardiff.

Grand Collection of Stamps for sale, 2,500 in Gibbons' Imperial. What offers? Approval, deposit.—Francis, 25, Church Road, Maidlee, Newport, Mon.

Hand Cameras (Victoria) to carry 12 ½-plates, splendid results, easily manipulated, with view finder, post free, 5/6.—H. Fowler, 202, Victoria Park Road, Hackney. B. 1.

Home Writing.—Copying Recipes, remuneration 1/- per dozen copies; sample recipes, 1/1 (returnable unless appointed); send stamped directed envelope.—Stanley, Billson St., Poplar, London.

How to Become an Artist.—Complete instructions given free. Postal Order for 2/-.—A. Clark, 152, Pleck Road, Walsall.

Lancaster's ½ Le Merveilleux, 2 dark slides, tripod, 18/- complete.—W. Scargell, March.

Long Photo Frames to hold six ½-plates, 6d.; ½-plates 7½d. each.—Pallion, Sawmills, Sunderland. H. 1.

Model Yacht, 3 ft. long, 5 ins. beam, and 9 ins. deep, schooner rigged, cheap, 6/-.—T. Haycocks, 100, Northumberland Street, Liverpool.

Musical Box.—2C airs, Zither accompaniment.—Tricker, 30, Church Road, Battersea, London.

New Book of Instructions in gilding, graining, mixing paint, French polishing, picture-frame making, mount cutting, etc., 1,000 valuable recipes, free, 1/2. Decorators' Assistant, 600 recipes, free, 10d.—McQuhae, Cockermouth, and all Booksellers. Z.M. 2.

Opera Glasses on sale in case, 4/-.—J. Suthurst, Rough Hill, Jericho, Bury, Lancashire.

Postage Stamps.—Edward W. Drury, Westholme, Hesse, E. Yorks., is a buyer of rare stamps; high prices paid. G. 2.

Rubber Stamp Making, complete outfit 2/9. Stamp for particulars.—H. Cole, Warwick Avenue, Didsbury, Manchester.

Solid-tyred Bicycles from 12/6; Cushions from 25/-; Pneumatics from £3 10s.—Lund, Cycle Agent, Bradford. See our Fretwork Advt. in No. 20.

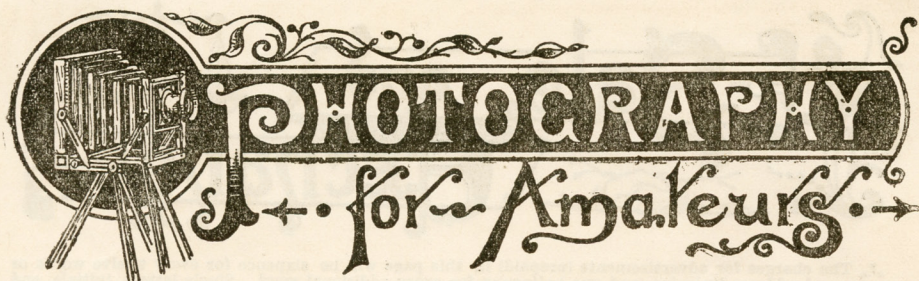
Stamps.—25 varieties, 7d; approval sheets.—Maxwell Mortimer, 71, Gurney Street, Walworth.

Special Advantage to Amateurs.—Best Stains on the Market. All Woodworkers should send stamped address for prices to Waste, 121, Lomax Street, Rochdale. B. 1.

Wanted.—Tit-Bit Camera in good condition; send particulars.—Silver, Letcomb, Wantage.

£20 Worth of Stamps given away, particulars free on receipt of your name and address; great bargains in packets and sets.—John Davey, Hatfield Peverel, Witham.

*. As we are obliged to go to press about ten days before the nominal date of publication, Advertisements must be received at our Office on Wednesday morning to ensure insertion in the following week's issue.



PHOTOGRAPHY

for Amateurs

NOTES OF THE WEEK.

WE have before us a very useful little magazine, the "Junior Photographer," which contains many items of interest and hints to those who make Photography their hobby. Mr. H. J. L. Massie writes upon "How to make a Lens Cap." Such an accessory, if lost, is more difficult to replace than anyone would suppose. Mr. Massie suggests that a strip of thin white paper should be cut that will just meet round the circumference of the hood of the lens. This should be fixed to the hood by slightly damping or gumming. He then suggests that lantern slide binding strips should be damped—they having an adhesive preparation on one side—and wound tightly round the white paper, taking care to keep them quite evenly, following on with other strips until the circumference, or what forms the rim of the new cap, is one-tenth or one-eighth of an inch thick. The flat surface of the cap may be made out of stout card-board, attached to the rim with Le Page's liquid glue. In his article he suggests many other ways of making a lens cap.

An excellent example has just come to hand of the New Photography. This photograph or radiograph was taken early in March, by Mr. Freshwater, before the members of the London Provincial Photographic Association, and is of the hand of a member, Mr. E. J. Harvey. Every bone of the hand is distinctly portrayed, and the peculiar root-like growths under the nails. A very exceptional interest attaches to this radiograph from the fact that Mr. Harvey has the misfortune to have embedded in his index finger three small pieces of steel, and these are plainly to be seen. The exposure was by means of a new tube—not a Crooke's tube—for conducting the rays, brought out by Messrs. Newton & Co. The hand was exposed under several thicknesses of black waterproof paper, which is perfectly opaque, for only two minutes, and the plate, with even so short an exposure, when developed, shewed signs of considerable over-exposure. Radiographs have been taken with the X rays many times, but the exposure given has never been less, we believe, than twenty-five minutes. The particulars of the new tube are not yet before us, but the resulting radiograph is certainly the best we have seen.

A One-Man Show of Photographs is being held at the Camera Club, the one man being Lieut.-Colonel Gale, who has sent the club some hundred pictures.

Mr. R. Child Bayley, the assistant secretary of the Royal Photographic Society, has just published a book upon the management of the lantern. Mr. Bayley knows what he is writing about, and the book, "Modern Magic Lanterns and their Management," which is published at 1s., should be obtained by every Lantern reader of *Hobbies*.

There is considerable difficulty in photographing white surfaces out of doors; monuments, newly erected, always trouble the photographer. A correspondent in one of our contemporaries writes:—"I shall never forget the bother I had to photograph a monument, but one day we had a heavy thunderstorm, and as it was clearing off the sun shone out, and the dark clouds made, as I thought, an excellent background. Getting my camera I photographed the monument and got an excellent picture."

Mr. Brooker, of Hastings, whose ability in lantern slide work we have before mentioned in this column, recently demonstrated how in the making of lantern slides, local printing, with a match, might be very useful. We do not know whether Mr. Brooker has published any particulars of exposure and procedure.

In the course of a short lecture given by Mr. Alfred Watkins, at Hereford, upon "Hints on Development for Beginners," he said:—Developers could be conveniently classified by one characteristic, the rapidity or slowness with which density followed the appearance of the image. Hydroquinone and Rodinal were the extremes, the former only requiring to be developed about four and half times the time of the first appearance of the image to gain the same density which required a development of thirty-six times with Rodinal, and still the result with the two developing agents would be practically the same. Pyro belonged to either class, according to the amount used, which was not the case with any of the new developers, except Amidol. For under-exposure or instantaneous work, a developer in which detail appears at an early stage—such as weak pyro—may be used, with as little restrainer as possible, without fogging, and so secure soft gradation. For gross over-exposure, strong pyro was the best, and it was also a means of deviating halation. Having selected the developer, the remaining power rested in the length of development.

The following formula has been given us for stripping negatives:—

Hydrochloric Acid	$\frac{1}{2}$ oz.
Methylated Spirits	8 oz.
Water	2 oz.

The negative to be placed in this solution when perfectly dry.

A lecturer recently exhibited at Liverpool a microscopic section of ashwood, which by means of the photo-microscope he enlarged to about 275 diameters, using an isochromatic plate.

For many years the Ferrous-Oxalate Developer was almost universally used for the development of Bromide paper, but now the newer agents—Metol, Amidol, and Hydroquinone are generally used. The reason for this is the entire absence of iron salts, which with ferrous-oxalate impregnated the paper, and which it was practically impossible to eliminate.

The following hints upon the selection of a shutter may be of service:—(1) It should be simple in construction and not liable to get out of order. (2) It should be perfectly reliable in action. (3) It should be adjustable for a good range of speed, and capable of giving time exposures to be controlled by the release. (4) It should be light in weight and small in size. (5) It should work silently and without vibration. For ourselves we do not favour elaborate shutters, and believe that excellent work may be done with a drop shutter, especially if fitted with a pneumatic release.

The Rev. F. C. Lambert, in an article in the *Amateur Photographer* upon "Fog, some causes thereof," after describing (a) Chemical Fog, (b) Light Fog, (c) Fog in the Dark Slide, (d) Fog in the Camera, says:—Light may get in through some hole in the bellows, or where the bellows is glued to the wood, back and front. A hole in the bellows can be mended by a tiny patch of black "court plaster" both inside and out. If the ends have parted from the wood they may be repaired with thin hot glue. Light may reach the plate from some defect in the camera front. The lens flange may not be properly screwed up. Dust on the surfaces of the lens glasses or cracks in the glasses may tend to scatter light and so cause fog. There are, of course, many causes, and the only thing to be done is to perform every operation with care and caution.

The first camera constructed in Great Britain was made for the late Mr. Samuel Fry in the year 1839 by one Edward Palmer, of London, and it was exhibited in April, 1853, at the third meeting of the Photographic Society.

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Mr. R. M. JACKSON, Buxton, writes: "I received your 3s. 6d. Camera Set safely, and I beg to state that I have never seen anything so wonderful before for the money. I have never taken a photograph before, but I easily took a splendid one with the Camera which you sent me, which is a marvel for the money."

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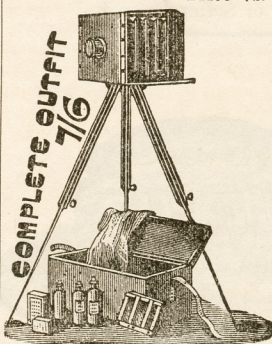
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Consists of a full $\frac{1}{2}$ -Plate Sliding-Bellows Camera (taking Pictures up to $4\frac{1}{2}$ by $3\frac{1}{2}$ inches), made of solid Mahogany, polished, fitted with a good Double-convex, Brass-mounted Lens, improved Dark Slide, Light-proof Focussing Screen, improved Focussing Arrangement, packet of Dry Plates, Developing and Fixing Solutions, and full instructions, enabling any amateur to take a good Photograph. Price 3s. 6d.; or securely packed by parcels post, 4s.

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For full particulars of more expensive Cameras, ranging in price from one to twelve guineas, see our new and fully illustrated catalogue of Photographic Apparatus.

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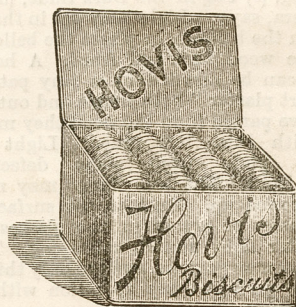
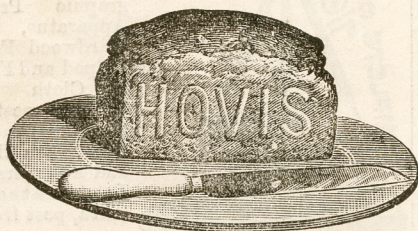
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